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Remarks - Argument

Claim Rejections-35 USC-112

2. Claims 21 and 22 are rejected under 35 USC 112 second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrase "dependent from above" is not clear.

3. Claims 21 and 22 recites the limitation "the jack and "the arm". There is insufficient antecedent basis for these limitations in the claims.

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The phrase "dependent from above" is removed.

"the jack" and "the arm" are repeatedly recited in the specification and in the reference numeral list.

6. Claims 21 and 22 are rejected under 35 USC 103(a) as being unpatentable Dodds and Kimble.

Dodds et al discloses the use of a grand piano(column 4, lines 5-10) with a jack (26), a spring (38), and a friction reducer(39).

Dodds does not disclose the use of a knuckle.

Kimble discloses the use of a grand piano where friction is eliminated at the knuckle and the jack(column 2, lines 6-20).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the piano as disclosed by Dodds to include the knuckle as disclosed by Kimble in order to provide a device that requires fewer regulation adjustments over time.

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Kimble's piano action is a Hybrid, different from applicant's conventional piano action wherein the jack (43) lifts the knuckle (12). Kimble's knuckle (88) is lifted by the modified repetition lever (72) which is connected pivotally to Kimble's articulated hybrid jack (60) - Dodds does not have a knuckle.

Claims 21 and 22 are corrected and again amended defining patentably over Dodds and Kimble. Therefore applicant submits that claims 21 and 22 are now in condition for allowance which action applicant respectfully solicits.

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Version with markings to show changes made

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Figure 2 in a side view shows the arm 13A of the jack 13 being supported by the spiral spring 31 dependent from the regulating screw 32 carried by the flange 25 the regulating screw regulates the spiral spring to an appropriate tension, a higher tension would cause the jack to rise; the upward movement of the jack along with the spiral spring causing the spiral spring to be shortened effecting the spiral spring inert, disabled, ~~causing~~ permitting the jack to escape from the knuckle 12 easily by a ~~very~~ light piano key 19 effected by absence of the traditional excessive friction between the knuckle 12 and the lifting surface of the jack 13, when the arm 13A of the jack 13 hits the escapement let off button 29.

The regulating screw 32 can have a wire inside a hole along the regulating screw 32 with both ends bent, the lower end carrying the spiral spring 31, the upper end supporting the spiral spring, the screw 32 can have a depression around the end for a coil of the spiral spring 31 to hold on, or as shown in FIG.2 the spiral spring 31 being in the hole along the regulating screw 32.

In the present invention the excessive friction plaguing grand pianos is eliminated by a deformable means; a spiral/convoluted spring means, resilient/elastic means or flexible means such as a string, tape or chain connecting the arm 13A of the jack 13 to the flange 25 or to the repetition lever 20. The deformable means holding the jack under the knuckle being shortened into a relaxed state inert, disabled when the arm 13A hits the escapement letoff button 29, resulting in a light piano key. The deformable means being rectilinear can be formed into a band enveloping the repetition lever and the arm of the jack.

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Version with markings to show changes made

Figure 3 in a side view shows the arm 13A carrying a regulating button 33 resting on a spring 34 carried by a rail 35, the upward movement of the arm 13A effecting the spring 34 carried by the rail 35 to rise inert, disabled ~~[causing]~~ permitting the jack to escape from the knuckle without the traditional excessive friction when the arm of said jack hits the escapement let off button.

FIG.3A in a side view shows a spring means 34 carried by the rail 35 residing in a groove 36 under the arm 13A of the jack 13.

Fig.4 in a side view shows the first end of the spiral spring 31 being attached to the end of the repetition lever 20 carried by an upstanding portion of the wippen lever 18 the distal end of the wippen lever 18 carrying the jack 13. the ~~[other]~~ second end of the spiral spring 31 being attached to the arm 13A of the jack 13. A band can be formed from a spiral spring stretched about the end of the repetition lever and the arm 13A.

FIG.5 in a side view shows spring means 34A carried by wippen lever 18 supporting arm 13A opposing regulating button 29A, arm 13A opposing escapement let off button 29, upon depression of key 19 spring 34A contacts regulating button 29A disengaging spring 34A from arm 13A and at the same time arm 13A contacts escapement let off button 29 effectuating jack 13 to slide away of the knuckle 12 without excessive friction.

FIG.6 in a side view shows a flexible means 37 such as a string or chain being connected to the arm 13A of the jack 13 passing through the repetition lever 20 and being connected to a regulating screw 32A carried by the flange 25. The flexible means being rectilinear loosely set permitting the jack 13 to be lowered under the knuckle 12 with the hammer 10 elevated to approximately a half inch from the tensioned string 23 without back check 22.